

Plant remains from Amanzi Springs

M. J. WELLS

Botanical Research Institute, Department of Agricultural Technical Services

The main plant remains from the Amanzi Springs Formation (Deacon, 1970) can be summarized as follows:—

ENQHURA MEMBER

1. Six fruits or fruit segments, 5—7 mm. in diameter, flattened on one side, this side bearing an aril-like crown close to the point of attachment, and six portions of the same kind of fruit, all found in a localized area on Surface 3 in Area 2 (Fig. 2, No. 3). These are unidentified and not morphologically indicative of any particular vegetation type. The fruits are similar in size and shape, but not in detail, to fruit segments of *Grewia occidentalis* L.

2. Numerous, dichotomously branching herbaceous plants were found in Area 1 in the white sands and in the brown humic or herbaceous sands. In Square 2 (Fig. 1) a single community was exposed in a face of white sands. The upper branched portion of this community appeared to be cut off against a minor parting near the top of the sands.

All the stems and roots of the herbaceous plants in the white sands are “carbonised”, very fragile and disintegrate on removal from the matrix. The condition of the remains in the brown sands is somewhat better. No finer parts such as leaves or flowers are preserved in any horizon. This is possibly because of the coarseness of the matrix. The stems range in thickness from about 5 mm. at the base to 1—2 mm. at the top, branched section of the plants. As the plants are herbaceous and the aerial stems reach heights of 1·5 m., it is suggested that they could not have supported their spreading much branched tops unless surrounded by water, and that they represent an aquatic community. In the community in Square 2 the stems (Fig. 1) are not vertical, but lean at an angle as might be expected if growing in water. The community has been preserved by deposition around the individual stems and for this to have taken place, sedimentation would have been extremely rapid, probably within a single growing season.

RIETHEUVEL MEMBER

1. Numerous, disconnected, woody stems and root fragments, unidentified, but morphologically similar to those of dicotyledonous trees and shrubs at present growing near the springs.

From the wide range of material found, including fragile twigs, it is construed that there must have been a strong woody element present in the vegetation at the time the Rietheuveld sediments were laid down.

2. Three prickles bases with raised rims, 8—12 mm. long and 5—7 mm. wide, one retaining its prickle, which are morphologically indistinguishable from prickle bases which persist on corky outgrowths of the trunks of arborescent *Erythrina* spp. such as *E. caffra* Thunb. and *E. lysistemon* Hutch. found in Cutting 1 Extension in the brown humic or herbaceous sands (Fig. 2, No. 4).

Erythrina spp. do not occur in the immediate vicinity of the springs at present and are not characteristic of the bushveld community of the Amanzi area. *E. caffra* is an important con-

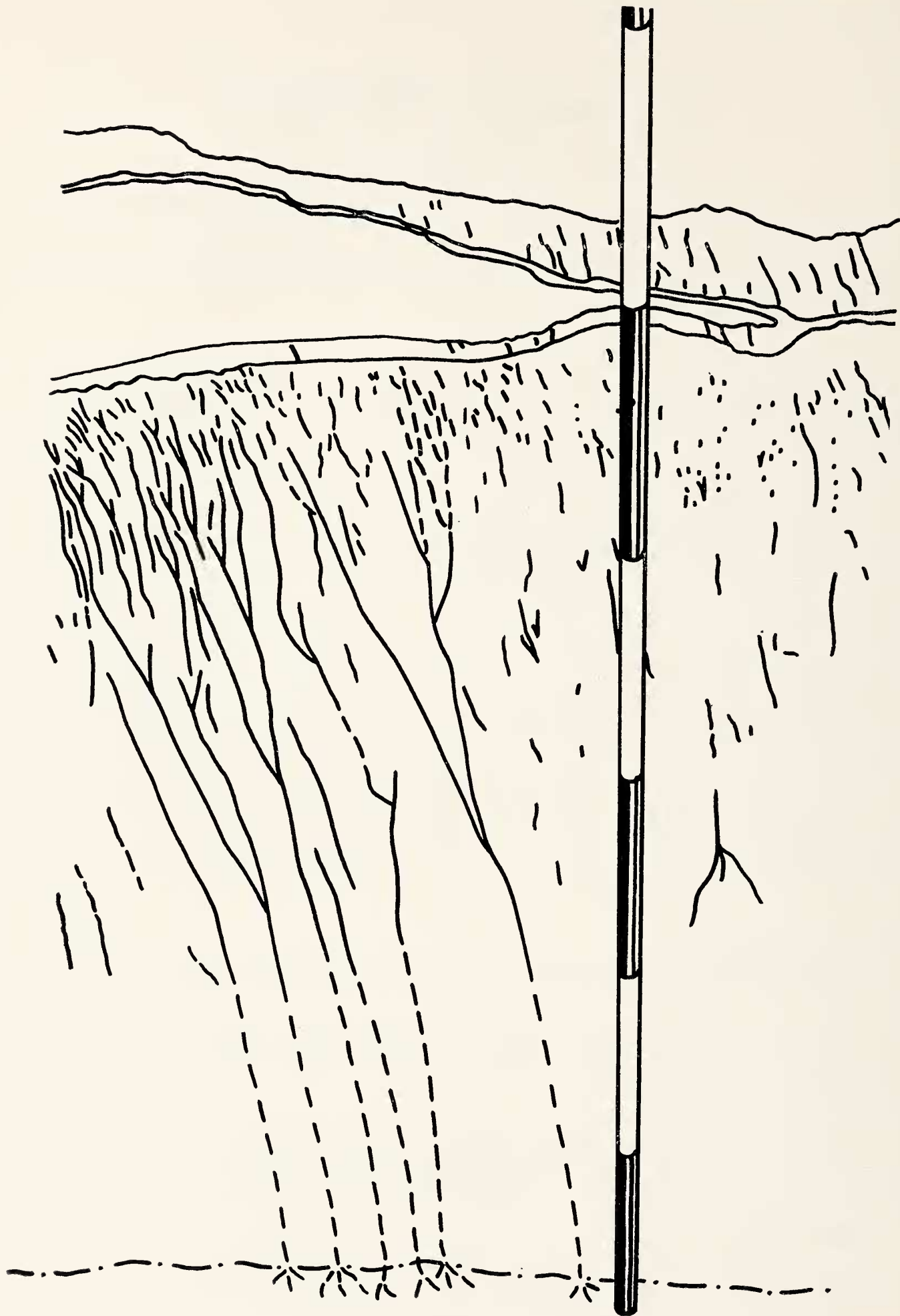


Fig. 1

WELLS: PLANT REMAINS FROM AMANZI SPRINGS

stituent of the dry coastal forest (Alexandria) into which the bushveld grades, and trees of the species occur in the bushveld where extra water is available, typically near rock outcrops and in stream bank bush. Cultivated specimens flourish in the homestead garden.

No tree species of this genus grows in mountain forests of Southern Africa and most are limited in distribution to frost free areas (an exception is *E. latissima* E. Mey). There is thus some basis for suggesting that the climate of Amanzi was much as it is at present, but perhaps wetter, when these remains were included in the deposit.

BALMORAL MEMBER

1. Thirteen portions of leaf or stem epidermis with individual pieces up to 2 sq. cm. in area, were found in Cutting 1 Extension in the pothole fill horizon. These sections of epidermis are made up of regularly arranged octagonal cells with thickened lateral walls. No stomata are present and no features suggesting the presence of specialised tissues beneath the epidermis which covered soft, sparingly veined plant tissues such as are present in the leaves or stems of succulents and hydrophytes.

2. Seven leaflets, 5—9 mm. long and 3—4 mm. wide, morphologically similar to those of *Schotia afra* (L) Bodin. were found in Cutting 1 Extension in the pothole fill horizon and in Area 2, Square 3, Quadrant 1, in material overlying the marginal clays (Fig. 2, No. 2).

Leaflets of this type, hard and small, are characteristic of the bushveld and savanna woody species, such as *Schotia* spp. and *Acacia* spp. and are only occasionally found in forest margin species such as the climbers *Entada* spp., *Dalbergia* spp. and *Acacia* spp. Therefore, the finds of this leaf type may suggest that the vegetation in the vicinity of the springs included xerophytic woody species as found in the savanna, bushveld or dry forest when these leaflets were incorporated in the sequence.

3. Three leaf portions of a fairly large-leaved dicotyledonous species, up to 1 sq. cm. in area, found in Cutting 1 Extension, Area 1, in the pothole fill. Unidentified. (Fig. 2, No. 1).

Leaves of this sort are usually borne on woody trees and shrubs and are found in bushveld, although commoner in forest and hygrophilous communities. Since the area adjacent to the springs may well have supported a vegetation more hygrophilous than that of the area as a whole, no conclusions regarding the nature of the surrounding vegetation may be drawn from the presence of these leaf fragments.

DISCUSSION

Scanty though the identified plant remains from the Amanzi site are, they allow some general statements on the Pleistocene vegetation to be made. There is good evidence of at least the periodic presence of an hygrophilous vegetation in the springs themselves. The finds of prickle bases of an arborescent *Erythrina* species similar to, if not identical with *E. caffra*, in the deposits of the Riethevel Member could indicate a local development more mesic than that at present in the area, or this could have been a more general condition. The leaf remains in the depositional units of the Balmoral Member suggest the presence of a woody community incorporating xerophytic components in the vicinity of the springs.

In as far as these few remains can be interpreted as evidence of general climatic conditions, it would appear that during the Acheulian occupation and the deposition of the lower horizons, conditions were not drier than at present and during the later period of spring activity, the climate was perhaps as dry as at present.

REFERENCES

- DEACON, H. J., 1970. The Acheulian occupation at Amanzi Springs, Uitenhage District, Cape Province. *Ann. Cape Prov. Mus.*

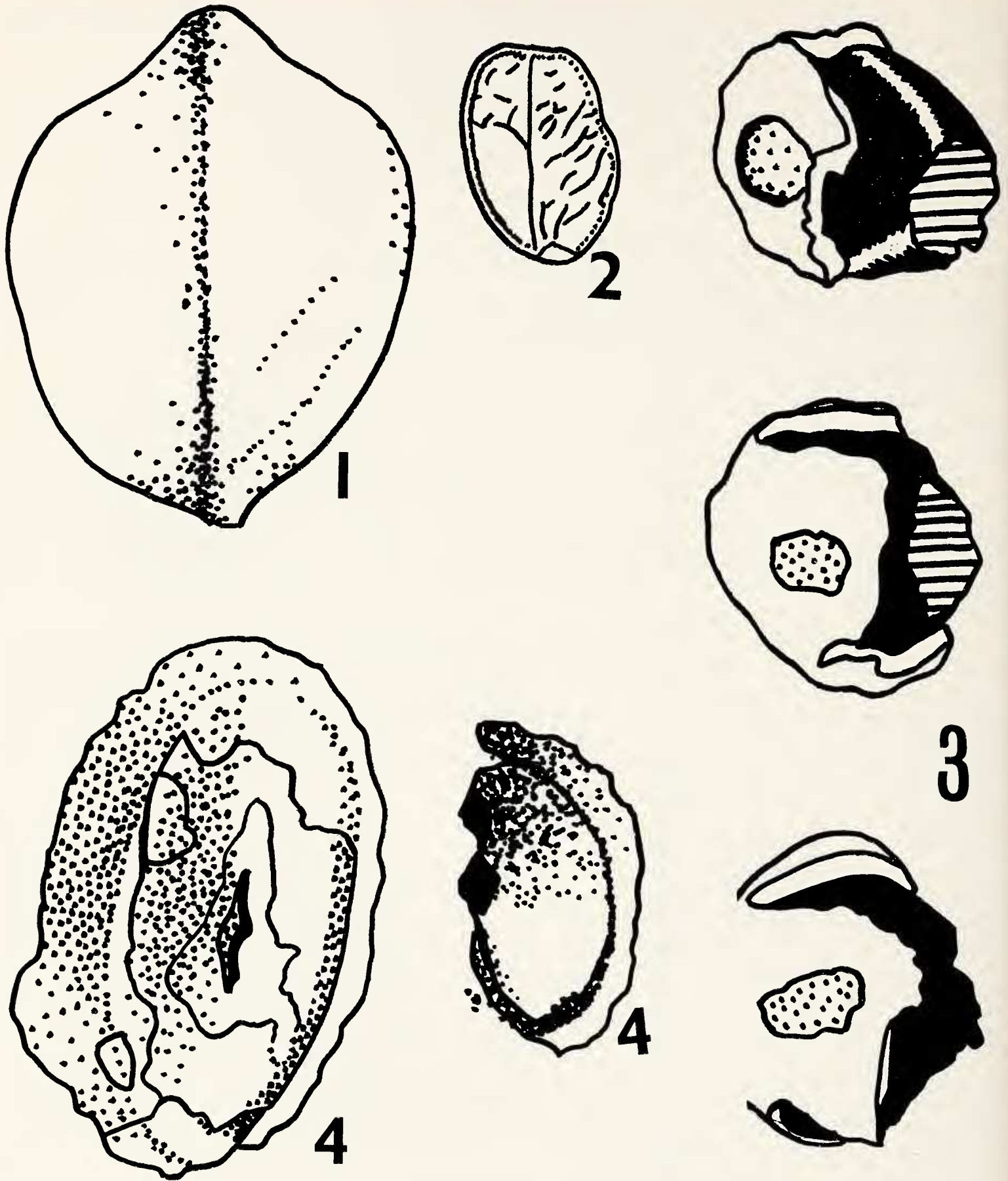


Fig. 2